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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,872	7590 02/09/2005	Ekapot Bhunachet	P01619	9445
MR. ERKAPOT BHUNACHET 2-32-22 KASUGA, TSUKUBA IBARAKI, 305-0821, JAPAN			EXAMINER MANTIS MERCADER, ELENI M	
			ART UNIT 3737	PAPER NUMBER

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/936,872

Applicant(s)

BHUNACHET, EKAPOT

Examiner

Eleni Mantis Mercader

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Please note in order to expedite prosecution the Examiner has addressed claims 1-5 as per applicant's request, even though they are officially cancelled. Also, claims 6-25 are still on the record so they are rejected on the same grounds. With the next response please re-submit previous claims 1-5 or respective amended claims on the basis of the current rejections as claims 26-30, and cancel claims 6-25 as they are still part of the record.

The Applicant is respectfully requested to provide a copy of his publication in Gastrointestinal Endoscopy for consideration by the Examiner with his next response.

Claim Objections

1. Claims 1-5 are objected to because of the following informalities: the claims appear to be narrative without clear recitation of the structural components and their associated functions. For example light is recited but the structure that emits the light is not. Also, terms "for example" make the whole scope of the claim confusing. Applicant should amend the claims to clearly recite each of the structures, which are part of the system and their associated functions in an active step format. There is also no transitional phraseology in the preambles such as "comprising" or "consisting." Please reformat to conform to US Practice. Appropriate corrections are required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagnieres et al.'227 (US Patent No. 6,148,227).

Wagnieres et al.'227 teach an endoscope having a small attachment compatible with endoscopes, which includes a black and white CCD (see col. 1, lines 59-67). A fluorescence electronic endoscopic system, in which excitation blue light (see col. 3, lines 43-52) is projected on the tissue (see col. 1, lines 7-12) and emitted fluorescence is received by the black and white CCD (see col. 1, lines 12-25 and see col. 2, lines 16-46) and through filtering and reception in two or more channels RGB, the detected signals are utilized to provide a fluorescence image on a monitor (col. 2, line 47-col. 3, line 13).

Wagnieres et al.'227 further teaches use of an additional channel, the blue channel in order to provide a reflection image, which can be superimposed to the Red/Green (background) image (see col. 3, lines 22-33).

Wagnieres et al.'227 teaches a filter or filters to allow selective transmission of the spectral region of interest to and from the tissue (see col. 4, lines 4, lines 24-27). While the specific filters are not enumerated it would have been obvious to one skilled in the art as to the specific use of a variety of filters to achieve a RGB fluorescent image as these are well within the knowledge of skilled artisans.

Wagnieres et al.'227 teach the use of the endoscope with a photo-sensitizer (see col. 2, lines 11-15). While Wagnieres et al.'227 does not expressly teach the use of fluorescein sodium, this is a well known photo-sensitizer to enhance the fluorescence image. Therefore, it

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would have been obvious to one skilled in the art at the time that the invention was made to have used fluorescein sodium to further enhance the image.

4. Claims 6-14 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacAulay et al.'660 in view of Longacre'758.

Regarding claims 6, 9, and 11-14, MacAulay et al.'660 teach all the elements of the current invention including:

- at least one excitation light emitting system structured and arranged to illuminate the subject matter with excitation light (col. 10, lines 17-18; referring to the excitation light);
- at least one non-excitation light emitting system structured and arranged to illuminate the subject matter with non-excitation light (col. 10, lines 15-16; referring to the excitation light);
- at least one alternating system structured and arranged to alternate use of said at least one excitation light emitting system and said at least one non-excitation light emitting system (col. 10, lines 15-18; referring to the light source structured to sequentially illuminate the area of interest);
- i) wherein said at least one alternating system is structured and arranged to illuminate the subject matter for first periods of time essentially only by said at least one excitation light emitting system, and
- ii) wherein said alternating system is structured and arranged to illuminate the subject matter for second periods of time by said at least one non-excitation light emitting system (col. 10, lines 15-18; referring to the light source structured to sequentially illuminate the

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area of interest, or otherwise stated alternating illumination with non-excitation and excitation light over a single cycle);

- at least one filtering system structured and arranged to prevent transmission of excitation light and permit transmission of non-excitation light (col. 10, lines 18-20; referring to the filtering system permitting transmission of non-excitation red light and blocking all else);
- at least one image sensing system structured and arranged to sense images of the subject matter from light transmitted by said filtering system (col. 10, lines 20-35; referring to the CCD sensor capturing the images. Also since at least two images are detected one from excitation and one from non-excitation, inherently there is differentiation between the two type of images);
- at least one superimposing system structured and arranged to superimpose such images sensed by said image sensing system (col. 10, lines 34-45),
- i) wherein at least one such image sensed during such period of time is superimposed with at least one such image sensed during such second period of time to create at least one such superimposed image (col. 10, lines 35-38); and
- at least one image viewing system structured and arranged to permit viewing such at least one superimposed image (col. 10, lines 38-40 and see display 18 in Figures 5).

Regarding claims 10 and 20-21, MacAulay et al.'660 teach the use of three different channels (see col. 8, lines 21-35).

Regarding claims 7 and 8, while MacAulay et al.'660 do not teach an adjuster filter to adjust for intensity of either excitation or non-excitation light, MacAulay et al.'660 teach the creation of a remittance light image to account for image non-uniformity caused by changes in

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illumination intensity (see abstract), and thereby constituting an alternative functional equivalent resulting the same end result of adjustment of variation of the intensity of light.

MacAulay et al.'660 do not expressly teach the use of a black and white CCD. In the same field of endeavor, Longacre'758 teaches the use of a black and white CCD in an endoscope (see col. 1, lines 10-28). It would have been obvious to one skilled in the art at the time that the invention was made to have used the black and white CCD in the endoscope of MacAulay et al.'660 allowing accessibility in confined regions because of its small size (see in Longacre'758 for motivation to combine col. 1, lines 10-16).

5. Claims 15-19 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacAulay et al.'660 in view of Longacre'758 and further in view of Alfano et al.'556.

Regarding claims 15-19 and 22, MacAulay et al.'660 do not explicitly teach the use of a rotating disc or a wheel as alternatively well known to skilled artisans, to filter different light wavelengths. In the same field of endeavor, Alfano et al.'556 teach the use of a wheel in order to detect different images from different light emissions (see col. 12, lines 52-67 and col. 13, lines 1-29). It would have been obvious to one skilled in the art at the time that the invention was made to have used the rotating disc or wheel as taught by Alfano et al.'556 in the invention as taught by MacAulay et al.'660 as a functional equivalent of being able to separate or isolate the detected emissions and thereby get the same end result of at least two different images.

Regarding claims 23-25, while MacAulay et al.'660 do not teach an adjuster filter to adjust for intensity of different light wavelengths, MacAulay et al.'660 teach the creation of a remittance light image to account for image non-uniformity caused by changes in illumination

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intensity (see abstract), and thereby constituting an alternative functional equivalent resulting the same end result of adjustment of variation of the intensity of light.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eleni Mantis Mercader whose telephone number is (571) 272-4740. The examiner can normally be reached on Mon. - Fri., 8:00 a.m.-6:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Eleni Mantis Mercader
Primary Examiner
Art Unit 3737

EMM